REMARKS/ARGUMENTS

Reconsideration is respectfully requested of the Official Action of June 22, 2006, relating to the above-identified application.

A one-month extension, together with the associated fee, is filed herewith.

The rejection of Claim 1, under 35 U.S.C. § 112 (first paragraph) has been addressed by amending Claim 1, as well as Claim 6, to specify that the claimed silicas have a tamped density of 280 g/l or less. Basis for this limitation is found at the bottom of page 1 of the application and at the top of page 2, which explains that products with a tamped density have more than 280 g/l leads to poor results. Thus, the operable range of the tamped densities includes 280 g/l, as well as silicas with a tamped density of less than 280 g/l.

Claim 5 has been rewritten in the more traditional U.S. patent practice style for a method claim and, hence, it is believed that the rejection of Claim 5 under 35 U.S.C. § 112 has been overcome.

With the amendment of Claim 5, it is believed that the rejection of Claim 5 under 35 U.S.C. § 101 has also been overcome.

The rejection of Claims 1-4 and 6-14 under 35 U.S.C. § 102(b) as anticipated by *Hartmann, et al.*, US 5, 959,005, is traversed and reconsideration is respectfully requested.

Hartmann is assigned to the same assignee as the present application and describes a method of producing a surface modified, hydrophobic silanized silica powder with the following physico-chemical properties:

Specific surface area according to BET	m^2/g	80 – 400
Average Primary particle size area according to electron microscope	nm	7 – 40
Tamped density according to DIN ISO 787/11	g/l	50 – 300
pH value	3 – 10	
Carbon content	%	0.1 – 15
DBP number according to DIN 53601	%	< 200

The method is carried out by spraying pyrogenically produced silica powder in a mixing container under intensive mixing, with water or dilute acid at first and then with hexamethyldisilazane, followed by mixing for 15 to 30 minutes, and then tempering at a temperature of 100 to 400° C for a period of one to six hours to thereby obtain the desired hydrophobic silanized silica.

Subsequently, destructuring or compressing can take place by mechanical action.

Hartmann's silica can be used for producing low viscosity polymer systems with a low flow point such as, for example, 1- and 2- component peroxide condensation- and addition-cross-linking silicon rubber systems. This is described in col. 1, at line 47, et seq.

In addition, the silica can be used as a flattening agent, for example, in paint or for the preparation of foils.

In col. 2, at lines 3-8, *Hartmann* describes his silica as making possible a high degree of filling and thereby producing good mechanical strengths because of its low thickening action and low flow point.

The hexamethyldisilazane used by *Hartmann* (HMDS) as shown on the attachment from the National Library of Medicine is a structure containing six methyl groups in total formed by

two trimethylsilyl groups. The HMDS contains only trimethyl groups. Hence, when the HMDS is used for the silanization process by *Hartmann*, the result would be the formation of trimethylsilyl groups on the surface of the silica.

In contrast therewith, applicants' claims call for the formation on the surface of only dimethysilyl or monomethysilyl groups. *Hartmann* does not describe the presently claimed subject matter within the meaning of 35 U.S.C. § 102(b). No dimethylsilyl groups or monomethysilyl groups are shown in *Hartmann* nor would those groups be formed on the silicas of *Hartmann* since the structure of the HMDS contains only trimethylsilyl groups.

Quite surprisingly, applicants have found that the silica defined by Claim 1 in the present application which is characterized by the dimethylsilyl and/or monomethylsilyl groups fixed on the surface of the silica display a substantially better improvement in the residual gloss achieved after a scratch testing of the lacquer of the surface. This is shown by the comparative data in the application, for example, Table 3 on page 9 which shows that the silicas of the invention (silica 1, silica 2, silica 3 and silica 4) still retain good reflectometer after scratching.

In addition, the silicas according to the invention do not cause an orange peel effect as pointed out in the application on page 18.

The fact that applicants' compositions achieve a better resistance to scratching and no orange peel effect could not have been predicted from prior art and particularly from the *Hartmann* patent, and accordingly, applicants' respectfully submit that Claims 1-4 and 6-14 are not anticipated by the cited reference. Withdrawal of the rejection is therefore respectfully requested.

The rejection of Claims 1, 6, 15, 16 and 17 under 35 U.S.C. § 102(b) in view of *Bock, et al.* (US 6,020,419) is traversed and reconsideration is respectfully requested. *Bock* describes, as stated in the Official Action, a transparent coating composition containing a binder and nanoscale primary particles which are obtained by jet dispersion of the nanoscale particles in the coating composition.

Among the particles described in *Bock* are pyrogenic silicas as mentioned in col. 3, lines 56-66. One of the silicas mentioned is Aerosil R972. This silica is made by treating pyrogenic silica with dimethyldichlorsilane.

The same silica, R972, is used in example 4, as shown in Tables 1, 2 and 3.

Table 3 represents that example 4 shows an improvement of 12% in respect to a coating composition that does not contain any silica.

According to the present invention, the silica of this application is compared to R972 as well in example 3. The scratch test shows that the silica according to this invention has a better residual gloss (see Table 5, last line).

According to the *Bock* reference, the solid nanoscale particles which are identified as Aerosil R972 are first mixed with the diluted polyol (a polyacrylate) which is used as a binder. This mixture is then passed three times through the jet dispersion apparatus according to Figure 5 of US patent 5,810,266. This means that the mixture is homogenized. Nothing is said about the structure of the nanoscale particles.

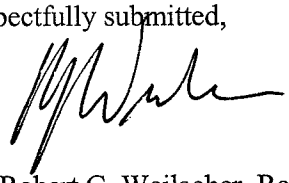
The silica according to the present invention has been structurally modified such as by passing through a ball mill before it is used in a lacquer composition. This type of structural

modification is not shown by *Bock* and, therefore the *Bock* patent fails to anticipate the claimed invention.

In view of the foregoing, it is respectfully submitted that the rejection of the claims as anticipated in view of *Bock* is not well considered and, therefore, the rejection should be withdrawn and the claims allowed.

Favorable action at the Examiner's earliest convenience is respectfully requested.

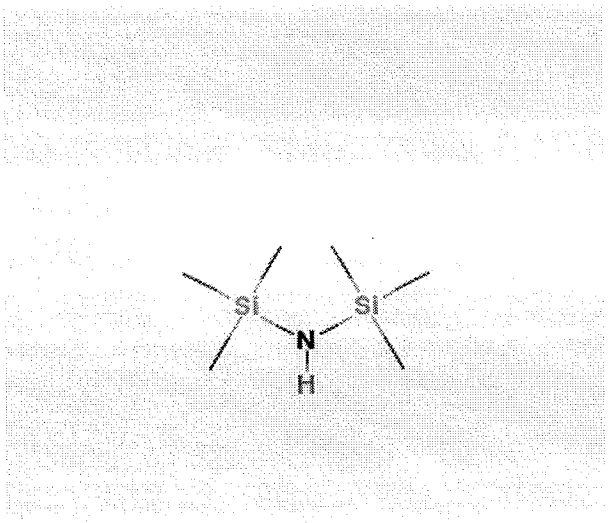
Respectfully submitted,



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Compound Summary:



CID: 13838

BioActivity: Summary
All: 1 Link
Inactive: 1 Link

NLM Toxicology: Link

Substances:
All: 132 Links
Same: 9 Links
Mixture: 123 Links

Similar Compounds: 4 Link

Structure Search

Mesh | Synonyms | Properties | Descriptors | Category

Medical Subject Annotations: (Total:2)

Display: Next 1 | All

hexamethylsilazane

Pharmacological Action:
Fixatives

PubMed via MeSH

Depositor-Supplied Synonyms: (Total: 40)

Display: Next 10 | All | Sort: Weig

Hexamethylsilazane
Hexamethyldisilazane
Tri-Sil
HMDS

Bis(trimethylsilyl)amine
HEXAMETHYLSIDILIZANE
Lithium hexamethyldisilazane
N-Lithiohexamethyldisilazane
DISILAZANE,HEXAMETHYL
Bis(trimethylsilyl)amidolithium

Properties Computed from Structure:

Molecular Weight: 161.393 g/mol
Molecular Formula: $C_6H_{19}NSi_2$

Hydrogen Bond Donor Count: 1
Hydrogen Bond Acceptor Count: 1
Rotatable Bond Count: 2

Descriptors Computed from Structure:

IUPAC Name: [dimethyl-(trimethylsilylamino)silyl]methane
Canonical SMILES: C[Si](C)(C)N[Si](C)(C)C
InChI: InChI=1/C6H19NSi2/c1-8(2,3)7-9(4,5)6/h7H,1-6H3

Substance Category:

Biological Properties: 3 Links
Physical Properties: 4 Links
Substance Vendors: 1 Link
Theoretical Properties: 1 Link
Toxicology: 1 Link

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